



Additional chart coverage may be found in CATP2, Catalog of Nautical Charts.

SECTOR 2 — CHART INFORMATION

SECTOR 2

NORTHWEST COAST OF HONSHU—TAPPI SAKI TO ROKUGO SAKI (INCLUDING OFF-LYING ISLANDS)

Plan.—This sector describes the NE part of the NW coast of Honshu, from Tappi Saki, at the W entrance of Tsugaru Kaikyo, to Rokugo Saki, about 266 miles SW. The sector includes Akita-Funakawa Ko, Sakata Ko, Niigato Ko, Naoetsu Ko, Fushiki-Toyama Ku, and Nanao Ko, which can accommodate large vessels. The islands of Kyuroku-jima, Tobi Shima, Awa Shima, and Sado Shima, which lie off the coast, are also described. The arrangement of the sector is from NE to SW.

General Remarks

2.1 Winds—Weather.—The winds on the NW coast of Honshu, from Roguko Zaki to Tappi Saki, are generally calm from April to August, but from September to March, strong winds and rough seas are common. During the good weather season, clear days may be expected when the wind is between the N and W, while rain or fog usually accompanies an extended period with the wind between NE and SE. During July and August, E winds early in the morning followed by winds from the N after 1000 indicate good weather. Around the end of August, there may be a period of E winds which lasts for several days.

Tides—Currents.—The mean tidal rise of the ports in this sector is 0.3m at MHWS, and 0.2m at MHWN. The tidal currents are generally weak.

Tappi Saki to Henashi Saki

2.2 Tappi Saki (41°15'N., 140°21'E.) was previously described with Tsugaru Kaikyo in [paragraph 1.46](#).

The coast from Tappi Saki to Kodomari Misaki, about 8 miles SSW, is backed by high land. Kodomari Misaki is a bold promontory, faced on its W side by a red cliff, and rising to a densely-wooded hill, 230m high. Lights are shown from the NW and SW extremities of the promontory.

A rock, with a depth of 8.5m, lies nearly 1 mile ENE of the NW end of Kodomari Misaki, and about 0.3 mile offshore.

Kodomari Ko, open NW, is entered between Benten Saki, about 1.3 miles E of Kodomari Misaki, and Nanatsuishi Saki, about 1.3 miles farther ENE. Benten Saki is the extremity of a peninsula, 52m high. Nanatsuishi Saki rises to a pointed hill, 79m high, close SE; rocky shoals, on which there are above-water rocks, up to 1.2m high, extend about 0.5 mile W of the point.

A small fishing harbor lies on the SW corner of Kodomari Ko and is protected by North Breakwater and No. 2 East Breakwater. A light is shown from the head of each breakwater. An outer detached breakwater lies 0.15 mile E of No. 2 East Breakwater. There are depths of 11.9m in the harbor entrance, shoaling gradually to 4.9m, about 0.3 mile offshore.

Anchorage.—The harbor affords temporary anchorage for vessels which cannot proceed through Tsugaru Kaikyo due to strong E winds. Temporary anchorage to avoid winds from the

E to S, can be taken about 1.5 miles N of Nanatsuishi Saki and 1 mile offshore.

The coast between Kominato Misaki and Otose Saki, about 24 miles SSW, forms an open bay with sandy beaches. Depths of over 20m lie about 1 mile offshore. Jusan Ko, about 6 miles SE of Kominato Misaki, lies at the entrance of a large shallow lagoon. In severe winter weather, the lagoon freezes over completely.



Otose Saki Light

2.3 Otose Saki (40°46'N., 140°03'E.) is bordered by sunken rocks and marked by a light. A peak, 359m high, and Masugata Yama, 820m high, rise about 2 miles SE and 5.5 miles S, respectively, of the point. A light is shown about 1.5 miles NE of the 359m peak.

Ajigasawa Ko (Azigasawa Ko), a small fishing harbor, lies about 7 miles ENE of Otose Saki. Iwaki Yama rises to an elevation of 1,624m, about 9 miles SSE of Ajigasawa Ko; its summit has three peaks, the center one is highest.

The coast between Otose Saki and Fukaura Ko, about 9.5 miles SW, is bordered by many rocks and dangers, and should not be approached within 1 mile.

Torii Saki, about 2.8 miles WSW of Otose Saki, is 18m high and conspicuous; two islets lie off the point. Torri Saki Light is



Torii Saki Light



Henashi Saki Light

shown from a round tower, 10m high. An auxiliary light, shown from the same position, illuminates reefs 0.15 mile NNW.

Fukaura Ko (Hukaura Ko), a small port, is open NW and has many dangerous rocks and shoals in its approach.

Henashi Saki (Henasi Saki) ($40^{\circ}37'N$, $139^{\circ}52'E$.), about 3.5 miles farther WSW, is the W extremity of Fukaura Hanto and is marked by a light. Tsubaki San, a 60m hill at the point, appears as an islet from a distance and is very conspicuous from N or S.

Caution.—Kyuroku-jima (Kyuroku Shima) ($40^{\circ}32'N$, $139^{\circ}30'E$.) consists of three above-water rocks, about 17 miles WSW of Henashi Saki, with other awash or sunken rocks in the vicinity. The W and largest rock, marked by a light, is about 57m long and 12.8m wide; it has two knobs, 6m high, and resembles a vessel from a distance. The other two above-water rocks lie about 0.1 mile ENE of the largest rock, and are 2m and 4m high, respectively.

A pinnacle rock, awash, and a rock with a depth of 1.8m, lie about 0.2 mile SE and 0.3 mile NE, respectively, of the largest rock. The sea breaks on the sunken rock.

A rock, with a depth of 5.2m, lies about 1 mile W of the largest rock of Kyuroku-jima, and a rock, with a depth of 4.1m, lies about 0.3 mile NE of the above 5.4m rock.

The bank, on which all of the above dangers lie, has irregular depths and vessels should avoid the area. The edges of the bank fall suddenly to depths of over 200m.

Henashi Saki to Nyudo Saki

2.4 Iwasaki Wan ($40^{\circ}34'N$, $139^{\circ}55'E$.), on the S side of Fukaura Hanto, is open SW. Okino Se, with a depth of 7.3m, lies in the bay entrance. Iwasaki Ko, a fishing harbor, lies at the head of the bay.



Iwasaki Ko Light

Anchorage.—This bay affords the best temporary anchorage in the area, sheltered from N through E winds by the high land on its N and E sides.

Sugo Saki (40°26'N., 139°56'E.) rises about 1.3 miles inland to Ohachinagare Yama, a dark, densely-wooded mountain, 638m high. A light is shown at Chigogi Saki, about 1 mile SSE of Sugo Saki.

The fishing harbors of Iwadata Ko and Hachimori Ko lie about 2.5 and 4.5 miles SW, respectively, of Sugo Saki.

O Shima, an islet, 10m high, lies near the coast about 0.8 mile SE of Hachimori Ko. The chimney of a steel plant is conspicuous on the coast close SE of O Shima.

2.5 Noshiro Ko (Noshiro Ko) (40°13'N., 140°01'E.), about 9.5 miles SSE of Sugo Saki, lies close S of the mouth of Yoneshiro Gawa (Yonesiro Kawa). The town of Noshiro (Noshiro) is situated on the S side of the harbor. A light is shown from the S side of the harbor, E of the harbor entrance. North and S breakwaters extend from the harbor entrance. Another light is shown close SW of the E harbor entrance.

The fairway to the harbor is about 90m wide, marked by lighted buoys, and dredged to a depth of about 10.1m. The draft limitation in the channel is 9.5m. The small basin has general depths of 7.5m.

Depths—Limitations.—The public wharf has a length of 185m, a depth of 10m, and a 15,000 dwt capacity. Nakajima Pier No. 1 and Nakajima Pier No. 2 both have a length of 130m, a depth alongside of 7.5m, and a 5,000 dwt capacity.

Aspect.—The sandy coast from Noshiro Ko to Kitaura Ko, about 18.5 miles SSW, has depths of 20m between 1 and 2 miles offshore, shoaling gradually shoreward. The coast for about 8 miles NNE of Kitaura Ko consists of crumbling black cliffs not exceeding 61m in height. Then for about 4 miles farther NNE a strip of level sand hills separates the reclaimed

N part of Hachiro Gato from the sea. Fixed fishing nets are laid in depths of up to 20m.

Pilotage.—Pilotage is not compulsory, but strongly recommended. Pilots are available at position 40°11'30"N, 139°58'E. Vessels should wait or take shelter off **Funakawa** (39°51'N., 139°53'E.) anchorage if the weather is rough from the NW. Berthing and unberthing during daylight hours only. Two tugs are normally stationed at the port.

Additional tugs will be brought from Akita when required, or hired from a construction company when available at Noshiro.

Anchorage.—Temporary anchorage can be taken off this coast, over a bottom, generally composed of sand. Caution is necessary to avoid the fishing nets.

Kitaura Ko (39°57'N., 139°47'E.) is a small fishing harbor. The depths off the coast between Kitaura Ko and Nyudo Saki, about 5 miles WNW, are irregular and the bottom is foul for some distance offshore.

Temporary anchorage during winds between the S and E can be obtained outside the line of the breakwater heads, in depths of 4 to 11m, sand, taking care to avoid fishing nets.

Oga Hanto

2.6 Oga Hanto, with **Nyudo Saki** (40°00'N., 139°42'E.) at its NW extremity, is a remarkable, mountainous peninsula. From a distance it appears as an island due to the low land and Hachiro Gata to the E of it. Hachiro Gata was the second largest lake in Japan, but 65 per cent of the original area has been reclaimed for rice cultivation. Hon Zan (Hon San), the highest and most conspicuous peak of the peninsula, attains an elevation of 731m, about 6.5 miles SSE of Nyudo Saki, and 1 mile inland; two white domes stand on its summit. The W side of Hon Zan is steep and appears copper-colored at a distance, but its E slope is gradual. Kampu Zan, with an elevation of 355m, lies about 6 miles ENE of Hon Zan, at the E end of Oga Hanto; it rises gradually from Hachiro Gata to three peaks, the E peak being the highest.

Nyudo Saki rises to an elevation of 76m, about 0.5 mile S, then rises gently to Bangoyanomori, a conspicuous pointed peak, 149m high, about 1.5 miles farther S. A light is shown from the point.

Mizu Shima, a reef awash, on which there are rocks 3.7m high, lies at the extremity of foul ground extending about 0.7 mile N of Nyudo Saki; a beacon on Mizu Shima is illuminated by an auxiliary light on Nyudo Saki. The sea breaks heavily on Mizu Shima during strong W winds; the current always sets N in the vicinity, and the sea also breaks with prevailing N winds. A boat channel, 7.9m deep, between Mizu Shima and Nyudo Saki, should not be attempted without local knowledge.

From April to November, fixed fishing nets which extend nearly 2 miles are laid off the E side of Mizu Shima.

Anchorage.—Small vessels can obtain temporary anchorage on the E side of Nyudo Saki, sheltered from winds between the S and W, off the village of Hatake, which lies about 0.5 mile SSE of the point. A good anchorage is in 11 to 22m, mud and sand, with Nyudo Saki bearing 298°, distant nearly 0.8 mile. The anchorage is difficult to reach due to fixed fishing nets.



Nyudo Saki Light

2.7 The W side of Oga Hanto is bordered by many above-water rocks and is relatively steep-to, with depths of less than 30m no more than 0.5 mile offshore.

Toga Ko, entered about 3 miles S of Nyudo Saki, provides shelter for small vessels with local knowledge. Nebuto Shima, 31m high, lies about 0.5 mile WNW of the N entrance point, and has the appearance of a peach from the N or S. Miya Shima, about 0.2 mile NW of the S entrance point, is 12.8m high and marked by a light; a flat rock, 7.3m high, lies close NW of Miya Shima.

Kamoasa Wan, about 3 miles SSE of Toga Ko, provides temporary shelter to small vessels from N to E winds; a rock, 5.2m high, lies about 0.2 mile offshore near the head of the bay.

Shioga Misaki (Shiose Saki) (39°51'N., 139°45'E.), the SW extremity of Oga Hanto, is flat-topped, conspicuous, and marked by a light. Hokake Shima, a rocky islet, 30m high, lies close E of Shioga Misaki; it resembles the sail of a local sailing boat when viewed from the E or W.

Mikuri-jima consists of three rocks, about 1 mile E of Shioga Misaki; the outermost rock is 1.8m high and marked by a beacon, which is illuminated from a light on Tateyama Zaki, about 0.5 mile NW. Tsubaki Ko, a small fishing harbor, lies close NE of the latter point.

Uno Saki, flat-topped, cultivated, and 32m high, lies about 3 miles E of Shioga Misaki; rocks, some above-water, extend about 0.2 mile SSE of the point.

Minami Hirasawa lies about 1 mile ENE of Uno Saki. Neno Saki, a crumbling cliff, 40m high, lies about 0.3 mile farther NE.

Akita-Funakawa Ko

2.8 Akita-Funakawa Ko (39°50'N., 140°00'E.), SE of Oga Hanto, consists of two districts, **Funakawa Ko** (Hunagawa Ko) (39°53'N., 139°51'E.) ([World Port Index No.](#)

61920) to the NW, and **Akita Ko** (39°45'N., 140°04'E.) ([World Port Index No.](#) 61910) to the SE. The port is frequented by large tankers and lumber vessels. Funakawa Ko, open E to SW, affords the best shelter between Sado Shima and Tsugaru Kaikyo, when Northwest Monsoons prevail. The waters of the inner harbor of Akita Ko are safe in winds from any direction, but entry is difficult for medium and large vessels in winter.

The inner harbor of Akita Ko lies inside the former mouth of Omono Kawa. The latter river enters the sea through a channel, about 4 miles S of Akita Ko, constructed to divert the flow of the river.

Winds—Weather.—Typhoons strike this area in summer and fall, and winter monsoons are violent. Typhoons, however, pass more rapidly and the strong winds are of short duration; whereas, winter monsoons frequently prevail for 3 or 4 days.

The prevailing winds are ESE and SE from April to December, and NW and WNW in January and February. The mean wind velocity ranges from about 10 knots in January to about 6 knots in August.

Tides—Currents.—The tidal rise at Akita is 0.3m at MHWS, and 0.2m at MHWN.

The flood tidal current off Akita Ko sets NNW and the ebb tidal current sets SSE. Under the strong influence of the diurnal tide, the tide often changes only once a day, with a velocity of less than 0.5 knot.

After a heavy rain an outgoing current, with a velocity of about 2 knots, may occur at the entrance to the inner harbor at Akita Ko.

Depths—Limitations.—At Akita Ko, there are dredged depths of 13m in the approach channel, from between the heads of the N and S breakwaters to about 230m N of Old South Breakwater. From this point to about 0.2 mile NE of the root of Old South Breakwater, a depth of 10.6m can be carried.

There are dredged depths of 12.8m alongside the S end of the reclaimed land S of the N breakwater.

Old South Breakwater is being extended 0.2 mile farther NW.

Kitako Basin, in the NE part of the harbor, is accessible by a channel dredged to 10.1m; a berth on the NE shore of the basin is 185m long, with depths of 9.8m alongside.

The river bed, from 0.2 mile NE of the root of Old South Breakwater, has been dredged to 11m for about 0.8 mile S. Nakajima Wharf, on the NE side of this area, has three berths, with depths of 8.4 to 9.3m alongside. Mukaihama Wharf and Tohoku Paper Company Wharf, on the SW side of this area, have depths of 8.6 to 11.6m alongside. Terauchi Wharf is 200m long, with a depth of 5.5m.

Gaiko Wharf has a new berth 260m in length, with a depth of 13m alongside. Mukaihama Quay has a new berth 240m in length, with depth of 12m alongside.

Akita Sekiyu Bitiku Kiti Sea Dolphin Berth, located close E of Minawa-Hirasawa Breakwater, has a depth of 19m alongside and can accept vessels up to 180,000 dwt.

At Funakawa Ko, the draft limitation in the channel is 7.5m. The Nikko Dolphin Berth, on the N side of the lighted breakwater which shelters the refinery, has a permissible draft of 8.8m and the capacity to handle vessels of up to 10,000 dwt. There are two mooring buoys NNW of the dolphin berth. The wharf close N of the dolphin berth has a permissible draft of 8.5m, a length of 185m, and can accommodate vessels of up to

15,000 dwt. There are two additional wharves having permissible drafts of 6.5m and 7m, able to handle vessels of 5,000 dwt and 7,000 dwt, respectively.

An oil refinery at Funakawa Ko is conspicuous. There are three berths, 600m in length on the S side of Funakawa Quay, with depths of 7.5 to 10m. The E berth is able to accept vessels up to 15,000 dwt. A quay formed by reclamation work extended ESE from the shore 0.3 mile N of the root of Funakawa Quay.

Lights are shown from head of the jetties which lie NW and SE at the extremity of the quay.

Aspect.—Aka Ne, a rock with a depth of 2.6m, lies nearly 1 mile S of **Minami Hirasawa** (39°52'N., 139°51'E.). **Aka Ne** (39°51'N., 139°51'E.) is the S of several dangers which lie S of the oil refinery. These dangers, over which the sea breaks during SW winds, are covered by the red sector of Uno Saki Light. Aka Ne Nampo lighted pillar buoy is moored 0.3 mile S of Aka Ne.

A lighted buoy is moored 0.2 mile NNE of Funakawa Breakwater Light, on the S side of shoal water.

A lighted buoy is moored about 0.4 mile ESE of Funakawa Breakwater Light.

Minawa-Hirasawa Breakwater extends 0.8 mile ESE and SE from a position 1.1 miles SW from the head of Funakawa Breakwater.

Akita Sea Berth Light, 31m high, is situated close E of Minawa-Hirasawa Breakwater. A submersible oil boom is situated at the berth; the berth is connected to the reclaimed land NW by a submarine oil pipeline. A lighted beacon is situated 183m NNW and 183m S of the Sea Berth Light. A fog signal is sounded from the S lighted beacon.

A conspicuous tower, 143m in height, has been established W of the harbor office, in position 39°44'N., 149°04'E.

A wave recorder lies about 0.5 mile S of the sea berth to which it is connected by a submarine cable.

Ne Shima, 0.3m high, lies between Aka Ne and the point. Numerous other rocky patches lie between Aka Ne and the breakwater at Funakawa Ko.

A white five-storied office block, situated 1.1 miles NW of Funakawa Ko Breakwater Light, is conspicuous. A harbor for small vessels, having depths of 2 to 3m, and a timber basin, lie farther N along the coast.

Oibana Saki (39°54'N., 139°54'E.), about 2.5 miles NE of the oil refinery, is faced with a remarkable white cliff, 40m high, from which the land rises to Kampu Zan, about 2.3 miles NNW.

The coast from Oibana Saki to Akita Ko, about 10 miles SE, consists of sandy beach free from dangers. It is backed by sandhills covered by grass and pine trees, inland of which arable land stretches to the foothills of the distant mountains, where Taihei San, the highest peak, reaches an altitude of 1,179m, about 12.5 miles E of Akita Ko.

Three chimneys, the E and highest, with an elevation of 185m, are painted red and white and are conspicuous about 1.3 miles NE of the harbor entrance of Akita Ko.

Three radio towers of the Harbor Office are conspicuous about 1.3 miles ESE of the head of Old South Breakwater.

Omori Yama, 124m high, lies close to the coast, about 6 miles S of the entrance to Akita Ko, and is surmounted by four TV towers, marked by red lights.

Pilotage.—Pilotage is not compulsory, but is recommended. Pilots for Akita Ko board about 0.8 mile W of Akita South Breakwater Light, and are available during daylight only. Pilots are stationed at Akita Ko and can be contacted on VHF channel 16.

Pilotage for Funawa Ko is not compulsory. The pilot boards 1 mile SE of Funakawa Breakwater Light, in the vicinity of the quarantine anchorage.

A vessel underway within the port will be instructed by the pilot to display certain flags of the International Code to indicate the wharf to which she is proceeding.

Anchorage.—The quarantine anchorage for Akita-Funakawa Ko is situated about 1.5 miles SE of the head of the breakwater at Funakawa Ko.

Good anchorage can be taken in Funakawa Ko, in 8m, mud, with the head of the breakwater bearing 177°, distant about 0.3 mile.

Large vessels can obtain anchorage off Akita Ko, in 12.8m, fine sand, with the previously-described radio towers bearing 100°, distant about 1.8 miles. Anchorage in greater depths can be taken farther offshore. Good anchorage for vessels under 1,000 grt can be taken, in 8m, with the head of Old South Breakwater bearing 350°, distant about 0.2 mile.

Anchorage for vessels with dangerous cargoes will be designated in the outer harbor.

Directions.—Vessels bound for Funakawa Ko from the N round Oga Hanto at a safe distance, then pass SE of the lighted buoy moored S of Aka Ne, and E of the lighted buoy moored SE of the breakwater head.

Approaching Akita Ko from the N, from a position about 2 miles S of Shioga Misaki, steer a course of 100° for the three chimneys of a power plant N of Akita. When a chimney, painted in red and white bands, and about 0.5 mile farther S, is sighted, steer for it.

Approaching Akita Ko from the S, steer for Kampu Zan, bearing 000°, until a chimney of a power plant at Akitu Ko is sighted. Alter course E when the chimney is abeam.

Entry into Akita Ko is dangerous with prevailing NW winds. The end of the breakwater is difficult to see until close to it.

Caution.—An area of prohibited entry has been established in the area S of the reclaimed land to the S of the refinery, extending to the area lying 0.5 mile inside the harbor limit. Reference should be made to the appropriate chart.

Two large fish heaven lie 2.5 miles and 4.5 miles W of the entrance to Akita Ko.

A submerged pipeline extends about 1 mile offshore from a position about 1.3 miles NW of Omori Yama; four framework towers, marked by red lights, lie at the seaward end of the pipeline.

Akita-Funakawa Ko to Sakata Ko

2.9 The coast between Akita-Funakawa Ko and Sakata Ko, about 51 miles SSW, has depths of over 20m about 1.5 miles offshore.

Matsuga Saki Light (39°30'N., 140°03'E.) is shown about 15 miles S of Akita-Funakawa Ko.

Honjo Ko (Honzyo Ko), about 7 miles farther S, lies in the mouth of Koyoshi Kawa; the river is only accessible to small boats. Honjo Light is shown from a hexagonal tower, 11m



Matsuga Saki Light



Honjo Ko Light



Ugo Mi Saki Light



Tobi Shima Light

high, which stands 1 mile NNE of the river mouth. A light is also shown on the head of a breakwater on the N entrance point of the river.

Sasamori Yama, surmounted by a clump of trees, rises to an elevation of 550m about 7 miles E of Honjo Ko.

Hirasawa Ko, a small fishing harbor, sheltered by breakwaters, lies about 6.5 miles SSW of Honjo Ko. Lights are shown on the heads of the E breakwater and of the jetty.

Anchorage.—Temporary anchorage, sheltered from winds between the NE and SSW, can be taken, in depths of 7.3 to 10.1m, sand, about 0.5 mile offshore, abreast Hirasawa Ko.

Konoura Ko, a small fishing harbor, lies about 3.3 miles SW of Hirasawa Ko. Konoura Ko Light is shown from a square tower, 11m high.

The town of Kisakata, about 3 miles farther S, lies on Shikoshi Hana, a low, sparsely wooded headland, rising to a hill, 11m high at its NW end. Kisikata Ko lies between the NW and SW extremities of the headland, and consists of a N and S cove for fishing vessels. A light is shown on the S end of the S breakwater.

Mi Saki (39°07'N., 139°52'E.), about 5.5 miles S of Shiokoshi Hana, is 106m high and densely wooded. Ugo Mi Saki Light is shown from Mi Saki. It is the extremity of a spur extending from Chokai San, about 8.5 miles E.

Aspect.—Two radio towers, both fitted with parabolic antennae, stand 0.15 mile and 1.5 miles E, respectively, of Mi Saki. The W tower is reported conspicuous.

2.10 Chokai San (39°06'N., 140°04'E.), a conical mountain, 2,230m high, is snow-capped, except in August and September; its peak is often hidden by clouds. It can be seen for a great distance, and appears to have two peaks when viewed from the N, and three peaks when viewed from S.

Tobi Shima (39°12'N., 139°33'E.), a relatively flat-topped island, lies about 15 miles WNW of Mi Saki. There are three hills of almost equal height; the S hill is 71m high to the tops of the trees and Tobi Shima Light is shown from the N hill. The shore of the island consists of beaches of sand and shingle, fringed by drying rocks. The island is surrounded by rocky shoals, except off its SE side.

Oshaku Shima, 76m high, is the N and largest of a group of rocks and islets about 1 mile W of the S extremity of Tobi Shima. The group is almost joined to Tobi Shima by rocky shoals.

A reef, with a depth of 8.2m, lies at the N end of foul ground extending about 0.8 mile N of Tobi Shima. Futamata Shima, 5.6m high, and Okami Shima, 6.3m high, lie on this foul ground, about 0.4 mile NNE and N, respectively, of the N end of Tobi Shima. A rock, with a depth of 2.1m, lies about 0.2 mile NE of Futamata Shima, and a rock, with a depth of 4.5m, lies about 0.4 mile W of Okami Shima.

Tobishima Hakuchi, the open bay on the SE side of Tobi Shima, has depths of over 20m about 0.2 to 0.25 mile offshore, and is sheltered from S to NW winds. Ebisumaisaki Hanto, a small peninsula, forms the SW part of the bay; a fishing harbor, formed by breakwaters, lies close NNW of the peninsula.

Anchorage.—Good anchorage can be taken, in 35m, sand, with the E extremity of Ebisumaisaki Hanto bearing 219°, distant 0.35 mile. Small vessels with local knowledge can anchor closer in off the breakwaters of the fishing harbor.

Caution.—A large part of the bay consists of a rock bottom, covered with sand, which is not suitable for anchorage.

Ara Saki (39°04'N., 139°52'E.), about 3 miles S of Mi Saki, is the N entrance point of Fukura Kawa, and is 19.5m high and grassy. A light is shown on the head of a small breakwater at the entrance point of the river.

The coast from the mouth of Fukura Kawa to Sakata Ko, about 9 miles SSW, consists of a straight, sandy beach, backed by extensive undulating plains, with mountains rising about 13 miles inland.



Sakata Ko Light

Sakata Ko (38°56'N., 139°49'E.)

World Port Index No. 61900

2.11 Sakata Ko, at the mouth of Mogami Gawa, is an important port for the distribution of rice, and the transshipment of lumber. The downtown area of Sakata, a commercial and industrial city, lies E of the port; there are numerous chimneys in and NW of the city.

The port consists of a S part, at the mouth of Mogami Gawa, and a N part, about 2 miles NNE. The S, or main harbor, is separated from the river by training walls; the head of this harbor is connected to the river by a small lock. Breakwaters shelter the entrance which is open NNW. The N part is a basin sheltered by Kitako North Breakwater extending SW from reclaimed land, and another breakwater extending WNW from the coast. A dredged approach channel leads to a berth in its NE part.

Winds—Weather

The winter monsoon frequently turns into a snow storm blowing for days. There are 140 to 150 stormy days per year, 60 per cent of which occur from November through March.

When a growing low pressure system originating in the sea of Japan moves to the Pacific Ocean across Honshu, the wind may abruptly shift from the E through SE to W through NW, causing a strong storm around Sakata Ko during the period from March through May. Fog seldom forms, and even when it does form, it usually lasts for only 4 or 5 hours.

Tides—Currents

The tidal rise at Sakata is 0.3m at MHWS and MHWN.

Tidal currents attain a maximum velocity of 1 knot. A noticeable N coastal current develops when SW winds prevail from the end of April through May.

Depths—Limitations

There are depths of about 8.9m in the fairway from the harbor entrance to Nishi Wharf. Then there are dredged depths of 7.3m and 7.1m to Sodeoka Wharf. Two mooring buoys, SW of Nishi Wharf, provide a berth for a vessel of 15,000 dwt.

In the N part, there are depths of over 14m in the harbor entrance. A channel, dredged to a depth of 12.8m, leads to a pier with depths of 10.1m alongside, on the S side of the reclaimed land, in the NE part of the basin. A T-shaped pier, with off-lying dolphins on the S side of the reclaimed land, has depths of 7.3m at its head.

Sakata Ko —North Port			
Wharf	Quay	Length	Depth
Kominato	No. 1	270m	13m
	No. 2	185m	10m
	No. 3	185m	10m
	Mooring	—	10m
Miyaumi	No. 1 and No. 2	340m	14m
	No. 3	130m	7.5m
	No. 4	130m	7.5m
	No. 5	130m	7.5m
Sumikei Aluminum	Exclusive use	270m	13m

Sakata Ko —North Port			
Wharf	Quay	Length	Depth
Kyodo Karyoku	Exclusive use	160m	5m
	Two oil berths	324m	7.5m
Outer Port	No. 1 and No. 2	560m	14m

Sakata Ko —Old Port			
Wharf	Quay	Length	Depth
Ohama	No. 1 (two berths)	330m	9m
	No. 2	90m	5.5m
	Oil Pier (two berths)	92m	7m
West	No. 1	185m	10m
	No. 2 (two berths)	180m	5.5m
East	Shinmachi (two berths)	260m	7.5m
	Funabacho No. 1 (four berths)	360m	5.5m
	Funabacho No. 2 (three berths)	195m	4.5m
Sodeoka	Three berths	390m	7.5m
Suisan	No. 1	140m	4.5m
	No. 2	215m	5.5m

Aspect

Sakata Ko Light (38°55'N., 139°49'E.) is shown about 1.3 miles NE of the entrance to Sakata Ko (S part). A radio tower, 60m high, with a parabolic antenna, is conspicuous about 2 miles SE of the above light.

A light is shown on the head of N breakwater from a tower, 13.7m high. Near the head of the S breakwater a light is shown from a tower, 16.8m high. Hiwa San, a hill 32m high with a monument on its W part, is conspicuous about 1.5 miles ESE of the above-mentioned harbor entrance.

Lighted buoys mark the entrance to the dredged channel in the N basin.

The Port Administration is increasing the facilities available by constructing new berths and warehouses as part of the public port development. The anchorage has been extended to allow vessels over 7m to berth.

Pilotage

Pilotage is not compulsory. Pilots are available and board at the quarantine anchorage. It is recommended that large vessels use a pilot when entering or leaving port.

Pilots are available at the quarantine anchorage from sunrise to sunset, for vessels requiring pilot services. Call "SAKATA-HO-AN" on VHF channels 16 and 12. The Combined Port Affairs Building is situated close S of Hiwa San.



Sakata Ko—Approaches



Sakata Ko—North Port



Sakata Ko—Old Port

Anchorage

The quarantine anchorage, with a radius of 0.27 mile, is centered about 1 mile NW of the head of North Breakwater at Sakata Ko (S part). This is a poor anchorage due to the continuous swell.

Vessels usually berth, but when the sea is calm, good anchorage, sand bottom, can be obtained by 1,500 dwt vessels with drafts up to 4.6m inside the N breakwater of the S harbor.

In bad weather, shelter can be taken in Tobishima Hakuchi, about 20 miles NW.

Caution

Entry into the S harbor is difficult with large swells caused by prevailing W through NW winds.

A sizeable area, specified for the setting of fish havens, has been established.

Sakata Ko to Niigata Ko

2.12 The coast from Sakata Ko to **Kamo Ko** (38°46'N., 139°44'E.), about 10.5 miles SSW, consists of a straight, sandy beach, backed by extensive undulating plains, with mountains rising about 13 miles inland. Kamo Ko is a small inlet sheltered by breakwaters. Ara Saki, 22m high, the W entrance point of Kamo Ko, is marked by a light. Three radio towers, marked by red lights, are conspicuous on the summit of a hill, about 1 mile E of Ara Saki.

An aero light is shown between 0800 and 1930, at an elevation of 52m, from a position 5 miles NE of Kamo Ko. A fish haven is reported about 2 miles SW of the aero light.

A hill, 307m high, is conspicuous about 0.5 mile inland, midway between Kamo Ko and Yura Ko, about 3.5 miles SW. Aneji Guri, a rock awash and steep-to, lies about 0.4 mile offshore, about 1.3 miles SW of Ara Saki. It is easily identified as the sea usually breaks on it.

Yura Ko (38°43'N., 139°41'E.), 3.5 miles NE of Hato Saki, is a small fishing harbor protected by a breakwater, on the head of which a light is shown. Hakusan To, an islet rising to a conical hill, is 70m high, and connected to the coast SE by a bridge. Kuraizumi Iwa, a rock, 4.6m high, lies nearly 0.5 mile W of Hakusan To, off the harbor entrance.

Obato Wan, about 3 miles SW of Yura Ko, provides temporary anchorage, sheltered from E through S winds, to vessels with local knowledge. Hato Saki, the W entrance point of the bay, is marked by a light and bordered by shoals. Ryutoan Shima, 3.7m high and marked by a light, lies nearly 0.5 mile W of Hato Saki. The channel between the islet and the coast has depths over 11m and is used by small local vessels.

2.13 The coast from Obato Wan to the mouth of **Miomote Kawa** (38°14'N., 139°27'E.), about 28 miles SSW, is backed by mountains and mainly rocky and steep-to, with some above-water rocks lying close inshore. A railway runs along this coast at a short distance inland.

Two radio towers, marked by red obstruction lights, stand about 4.5 miles SSW of Obato Wan. Atumi Take, 736m high and pointed, is conspicuous about 2 miles E of the N radio tower.



Hato Saki Light



Nezugaseki Light



Ryutoan Shima Light

Nezugaseki, a small artificial harbor, lies about 8.5 miles SSW of Obato Wan. Benton Shima, a dark, rocky islet, connected to the SW side of the harbor by reclaimed land, is 45m high to the top of a radio tower on its summit, and shows up well from the N or S. The islet is connected to the coast ESE by a breakwater, and a light is shown from its SW end. A reef, with a rock, 1.5m high, at its W end, extends about 0.1 mile W of Benton Shima.

The harbor is sheltered N by a W breakwater and rocks extending N from Benton Shima, and by an E breakwater

extending SW from reclaimed land in the NE part of the harbor. The navigable channel between the heads of the breakwaters is about 45m wide and open N. In winter, heavy seas penetrate the harbor and make entry difficult. A detached breakwater protects the harbor entrance. The general depths in the harbor are about 4.9m, with sandy bottom, providing good anchorage. A pier, on the NE side of the harbor, has a berth 145m long, with depths of 2.6 to 3.6m alongside.

Gas San rises to an elevation of 1,980m, about 22 miles E of Nezugaseki Ko.

Hokotate Iwa, a steep-sided rock, 68m high, lies about 4.5 miles SSW of Nezugaseki Ko.

2.14 Oshima Saki (38°23'N., 139°27'E.), about 6 miles farther SSW, rises to a steep hillock. O Shima, a brown, rocky islet, 11.9m high, lies off the point.

Budo Yama, 795m high, and Shimbo Dake, 852m high, are conspicuous about 4 miles E and 3.5 miles SE, respectively, of Oshima Saki.

O-Asahi Dake (38°15'N., 139°56'E.) rises to an elevation of 1,870m, about 22 miles E of the mouth of Miomote Kawa.

The coast from the mouth of **Miomote Kawa** (38°14'N., 139°27'E.) to Niigata Ko (East Harbor), about 18 miles SW, consists of sandy beach, broken by rivers, and backed by hills about 5 miles inland.

Senami Hakuchi, off the entrance to Miomote Kawa, provides good anchorage, in 5.5 to 9m, mud, within 0.5 mile offshore.

Iwafune Ko, a small port, lies about 3 miles farther SSW. Iwafune Ko Light is shown about 0.4 mile N of the port, and a round hill, 74m high, is conspicuous nearly 0.5 mile N of the port.

The harbor consists of a basin protected by the West Breakwater, which extends 0.5 mile SW from the W side of the en-

trance to Ishi Kawa. A light is shown from East Groyne, which extends WNW from the shore 0.2 mile S of Ishi Kawa entrance.

A detached No. 2 West Breakwater extends 0.2 mile SW from a position 183m SW of West Breakwater and No. 2 East Groyne extends 0.25 mile WNW from the shore, 0.25 mile S of East Groyne. A light is shown from its head. Other lights are also shown from the head of West Breakwater and from both ends of No. 2 West Breakwater.

Gagyu San, a round, densely-wooded hill, 135m high and isolated, lies about 3 miles NE of Iwafune Ko, and is conspicuous from the SW.

Kosagi San, 966m high, rises about 10 miles ESE of Iwafune Ko. Washigasu Yama, 1,093m high, about 5 miles NNE of Kosagi San, has twin summits, one pointed and the other round.

Ninoji Dake (Ninozi Take) (37°54'N., 139°30'E.) rises to an elevation of 1,421m, about 15 miles ESE of Niigata Ko (East Harbor).

2.15 Awa Shima (38°27'N., 139°15'E.) lies about 10 miles WNW of Oshima Saki. Koshiba Yama, 265m high, the summit of the island, rises a little S of the center of the island; a light is shown from Koshiba Yama. Detached reefs lie within 0.4 mile of the W coast, but the E coast is almost clear of dangers.

Tori Saki, the NE end of the island, is 58m high. A reef, with a depth of 6.7m, lies about 0.5 mile N of Tori Saki, and Tode Guri, with a depth of 1.8m, lies about 0.2 mile WSW of the reef. Engaiyama, a rock 0.5m high, lies about 0.4 mile NW of the N end of the island. Many rocks lie within 0.5 mile of the N end of the island.

Hachiman Hana, the SW extremity of Awa Shima, is 75m high. It is bordered by foul ground; the outermost danger is a reef, with a depth of 5.8m, about 0.4 mile SSW of the point.

Awashima Hakuchi is an open roadstead in the N part of the E side of Awa Shima; it is sheltered from W winds and is a better anchorage than Tobishima Hakuchi. Okinohata Saki, an islet, 12.8m high, lies close offshore, about 1 mile SSW of Tori Saki. Uchiura, about 0.5 mile farther SSW, is fronted by a fishing harbor, sheltered by breakwaters, in the SW part of Awashima Hakuchi.

Anchorage.—Good anchorage can be taken, in 14 to 21m, with Okinohata Saki bearing 354°, and with the N end of the outer breakwater at Uchiura bearing about 255°. Small vessels with local knowledge can anchor inside the line between the E end of Tori Saki and Okinohata Saki.

Niigata Ko (37°55'N., 139°03'E.)

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2.16 Niigata Ko consists of two sections. West Harbor (Nishi Ku), formerly Niigata Ko, is located at the mouth of Shinano Gawa (Sinano Kawa), and East Harbor (Higashi Ku), an artificial inlet, lies about 8 miles ESE. Breakwaters shelter the entrances to both harbors. The city of Niigata is built on either side of the mouth of Shinano Gawa; many factories are situated on the E side of the river, and government and business offices are situated on the W side. Agano Gawa enters the sea about 3 miles E of West Harbor. A light is shown from a round

tower, 15.8m high, on the E side of the entrance to Agano Kawa. An area in which fishing nets are set is situated 1.75 miles NE of the mouth of Agano Kawa.

Shinano Gawa is the largest river in Japan, and its basin is mostly flat plain, which has flooded regularly in the past. West Harbor is subject to silting. Depths at the mouth of the river are subject to silting, due to the Northwest Monsoon and the flood period.

Three small breakwaters were constructed up to 1 mile SW of the mouth of Shinano Gawa.

Winds—Weather

Northwesterly winds prevail during the winter in the vicinity of Niigata. From April through October, S winds are frequent, gradually shifting to W in November. The mean maximum velocity is about 10.5 knots in January, and the mean minimum velocity is about 6 knots in July.

Winter is cloudy and snowy, with monsoons. The monsoons occur in 3 to 6 day cycles. From late winter to early spring, there are strong SW to W winds caused by a low originating in the South China Sea and developing in the Sea of Japan. The period from May to October is relatively calm, although a typhoon may occur from July through December.

Tides—Currents

The tidal rise at Niigata is 0.3m at MHWS, and 0.2m at MHWN.

The tidal currents at Niigata set NE-SW at a velocity of less than 0.5 knot. The velocity is generally higher near the river mouth, attaining a velocity of 1 knot; it attains a velocity of 1.75 knots at the surface, and 0.2 knot at 4 to 6m below the surface.

A current sets E from the end of the East Breakwater.

Depths—Limitations

West Harbor.—Rinko Wharf, close S of East Breakwater, has depths of 10.6m alongside Berth A1 through Berth A3. It has a length of 373m, and can accommodate vessels up to 60,000 dwt. There are 11 other berths in the basin, with alongside depths of 5.8 to 10.9m.

Yamanoshita Wharfs, consisting of Berth Y1 and Berth Y2, SW of Rinko Wharf, has a depths of 7.5 to 9m alongside. Yamanoshita Wharfs accommodates passenger vessels operating between Niigata and Otaru.

The oil wharf, on the NW end of North Wharf, can accommodate tankers up to 33,000 dwt, with a maximum length of 207m, in a depth of 11m.

North Wharf has depths alongside of 7.5 to 9.5m.

Central Wharf has depths of 7.3 to 9.5m alongside, accommodating vessels of 8,000 to 15,000 dwt.

Bandaishima Wharf has depths of about 7m. Bandaishima accommodates passenger vessels operating between Niigata Island and Sado Island.



Niigata Ko

A large lighted mooring buoy, about 2 miles NE of the head of East Breakwater, lies at the seaward end of a submerged pipeline, and can accommodate tankers up to 120,000 dwt in depths of 20m.

Two chimneys, with elevations of 122m and painted in red and white horizontal bands, are conspicuous about 1 mile SE of the harbor entrance.

The signal tower near the root of West Breakwater is conspicuous. A radio tower, about 1.5 miles SSW, is conspicuous on top of a building, has an altitude of 93m, and is marked by red lights.

East Harbor.—There are general depths of 11.9 to 12.8m in the entrance to East Harbor and in the outer basin. The depths in the inlet decrease from 13.1m at the N end to 10.1m at the S end.

No. 3 East Dolphin Berth, on the inner side of the East Breakwater, has depths of 13.4m alongside. No. 1 East Dolphin Berth, farther S, has depths of 13.7m alongside.

No. 3 West Dolphin Berth, on the SW side of the outer basin, has depths of 8m alongside.

Shinto Berth, on the SW side of the inlet, has depths of 13m alongside. It has a length of 262m, accommodating a vessel of up to 55,000 dwt.

Niigata LNG Berth has a length of 460m, depth alongside of 14.3m, and can accommodate a vessel of 103,000 grt.

South Lumber Wharf, in the S part of the inlet, has depths of 10.1m alongside.



Niigata Ko

Aspect

An oil production platform lies 14 miles NE from Agano Kawa and is connected by a pipeline to the shore close WSW of Higashi Ku.

A chimney, painted in red and white bands and marked by red obstruction lights, is conspicuous with an elevation of 208m, about 0.8 mile ESE of the head of East Breakwater. A similar chimney, with an elevation of 165m, lies about 0.2 mile farther SW.

Oil tanks are conspicuous on either side of the outer basin.

An oil drilling platform, marked by lights, lies about 6.5 miles WNW of the entrance to East Harbor.

An aviation light at Niigata Airport, about 1 mile WSW of the mouth of **Agano Gawa** (37°58'N., 139°08'E.), is visible for a great distance.

Agano Gawa Light and Matsuga Sakihama Light are shown on the E side of the mouth of Agano Gawa.

West Breakwater No. 1 projects 2 miles NNE from the N corner of reclaimed land. A light is shown near the breakwater head. A detached breakwater lies close-to and parallel to the coast SW. East Breakwater No. 2 extends 0.4 mile NW from a position 0.75 mile NE of the root of East Breakwater No. 1.

Pilotage

Pilotage is not compulsory, but is advisable for vessels berthing. Pilots normally board at the quarantine anchorage, and are

available between sunrise and sunset. When the weather is bad, pilots may board near the port entrance after arrangements are made by radio.

Pilots for East Harbor come from West Harbor, about 1.5 miles NNE of the West Breakwater at East Harbor.

A berthing master boards vessels berthing at the offshore pipeline berth NE of West Harbor; the pilot remains on board during the vessel's stay.

Signals

Vessel movements in West Harbor are controlled by the following signals shown from the signal station. The light signals are shown day and night; by day the alternative signal may be used:

1. A flashing white light every two seconds, or a black cone, point up, signify that traffic may enter. Only vessels of less than 500 grt (tankers of less than 300 grt) may leave, others outbound must stop.
2. Two flashing red lights every three seconds, or a black square, signify that traffic may leave. Only vessels of less than 500 grt (tankers of less than 300 grt) may enter; others inbound must wait, clear of traffic, outside the breakwater.
3. Three white and three red flashing lights every six seconds, or two black cones, points together, above a red square flag, signify that only one ship, authorized by the Captain of the Port, may enter or leave.

The signal station, near the root of West Breakwater at West Harbor, displays navigation, anchoring, berthing and weather signals. Vessels should retain onboard the most recent edition of Japan Maritime Safety Laws and Regulations, obtainable through the Japanese Coast Guard. This publication should be kept as a reference for signal station communiques and their meanings, appropriate signals, and other local or specific regulations.

The Combined Port Affairs Building is situated near the foot of Central Wharf.

No movements of vessels are permitted in the harbor between sunset and sunrise without special authorization from the Captain of the Port.

Anchorage

The Quarantine Anchorage lies NW of West Breakwater (West Harbor).

Anchorage can be taken, in about 30m, about 1 mile N of the entrance to East Harbor.

Vessels waiting to enter port in a heavy sea should be careful not to drag their anchors, and should keep their engines on standby. In bad weather, it is recommended that vessels seek shelter at Sado Shima.

Directions

Entry and departure routes at West Harbor are one way, and vessels must enter quickly. Vessels should weigh anchor for immediate entry as soon as the pilot boat is seen.

A vessel entering West Harbor in winter should approach from the NNW of West Breakwater, remaining clear of the detached breakwater which is being extended NNE. With an

approach from the NNE of West Breakwater, strong NW winds and the river current may set the vessel toward East Breakwater and the shoal water on the E side of the entrance.

Caution

The harbor is subject to silting, and constant dredging is necessary. The fairway has been dredged, but the depth is liable to change, and a pilot should be taken.

Sado Shima

2.17 Sado Shima (Sado Shima) (38°00'N., 138°25'E.) lies W of Niigata Ko and is separated from the mainland by Sado Kaikyo, a deep strait, with a least width of about 17 miles. The S and E sides of the island are comparatively steep-to and there are no dangers beyond about 0.5 mile offshore. The W side is backed by eroded cliffs, and fringed by reefs extending up to 1 mile offshore in places.

Two ranges of mountains run parallel with and a short distance from the SE and NW coasts of the island, respectively, with a cultivated valley between them. Viewed at a distance from the NE or SW, Sado Shima appears to be two islands. Sado Shima is reported to be a good radar target at 18 miles. **Kimpoku San** (Kinpoku San) (38°06'N., 138°21'E.), 1,173m high, lies about 16 miles SSW of Haziki Saki (Hajiki Sake), the N extremity of the island, and is the highest peak in the NW range. **Ochi Yama**, 646m high, about 2.5 miles NNW of **Konose Hana** (37°55'N., 138°30'E.), is the highest peak in the SE range.

Ryotu Wan, in the NE part of the island, and Mano Wan, in the SW part of the island, provide good shelter.

Sado Shima—East Side

2.18 Haziki Saki (38°20'N., 138°31'E.), the N extremity of Sado Shima, is marked by a light; foul ground extends about 0.5 mile N of the point. Washizaki Ko, a small fishing harbor, lies close S of the point.

A light is shown from Miyano Saki, about 7 miles farther S.

Ryotu Wan

2.19 Ryotu Wan (Ryotsu Wan) is entered between **Hime Saki** (38°05'N., 138°34'E.) and Wakino Misaki, about 6.5 miles NW. Hime Saki, marked by a light, is bordered by above-water and sunken rocks extending about 0.2 mile offshore; Ryuo Shima, 21m high, lies about 0.5 mile E of the point. The shores of the bay are obstructed by a large number of fish traps and fish farm installations extending up to 1 mile offshore; these are unlit at night, poorly marked by day, and afford only weak radar responses.

Ryotu Wan (Ryotsu Wan) (38°05'N., 138°34'E.) ([World Port Index No. 61890](#)) lies at the head of Ryotsu Wan, at the entrance to Kamo Ko, a saltwater lagoon.

Ryotu Ko is protected by North Breakwater, which extends 0.35 mile SE from a position nearly 0.6 mile N of the entrance to Kamo Ko, and by South Breakwater, which extends 0.8 mile SE from near the head of North Breakwater and from a white tower, 9m high, at the head of South Breakwater. A short

detached breakwater lies 100m E of the head of North Breakwater; a light is shown from each.

During strong NE winds, the swell penetrates the harbor.

Depths—Limitations.—Most of the harbor installations lie on each side of the entrance to Kamo Ko, which is spanned by three bridges.

Berths in the harbor are, as follows:

1. North Wharf, close N of the entrance to Kamo Ko, comprises Berth No. 1 and Berth No. 2, with depths from 3.6 to 5.4m alongside.

2. South Wharf, the principal commercial wharf, close S of the entrance to Kamo Ko, comprises Berth No. 2 to Berth No. 6, 60m to 145m in length, with depths from 4.2 to 7.3m.

Aspect.—The reclamation extends NE from the shore to within 0.1 mile of South Breakwater. A light is shown on a short breakwater at the NE corner.

A tower, which marks the intake of a water pipeline, stands 0.2 mile S of the S end of South Breakwater; a light is shown from the tower.

Conspicuous at the wharf off the S side of the entrance to Kamo Ko is a four-storied yellow building, 21m high.

A pier for tankers and several buoys lie about 2 miles N of the harbor.

Anchorage.—Ryotu Ko provides safe anchorage, sheltered from all winds except those between the N and E. Anchorage can be taken, in about 20m, fine sand, in the area NNE to E of the head of the breakwater, distant about 0.5 mile. Large vessels can anchor, in depths of 25 to 45m, sand and shell, with the head of the breakwater bearing between 220° and 260°, distant between 1 and 1.5 miles. Approaching the anchorage between these bearings will ensure clearing the fishing nets and other obstructions.

Vessels of medium size can anchor within 0.5 mile of the detached breakwater light, between the bearings of 195° and 270°, in depths of 14 to 27m, fine sand, good holding ground.

Lights are shown from Joga Hana and Konose Bana, about 4 and 10 miles SSW, respectively, of Hime Saki. A radio tower, painted silver, with an altitude of 605m, stands on the summit of Ogami Yama, about 2 miles WNW of Konose Bana.

Akadamori Ko, a small port, protected by breakwaters, lies about 5 miles SW of Konose Bana. Good anchorage, sheltered from NNW winds, can be taken, in 7m, fine sand, good holding ground, about 0.2 mile offshore. A fish haven is reported close NE of the port.

Ogi Ko, about 7 miles farther WSW, is divided into two parts by a peninsula surmounted by Shiro Yama, a small hill. A breakwater extends SE from the peninsula; rocky reefs lie E of the breakwater. The W part of the harbor is a fishing zone, and the E part is only available to small vessels with local knowledge.

Sado Shima—West Side

2.20 Sawazaki Bana (Sawa Saki) (37°49'N., 138°13'E.), the SW extremity of Sado Shima, is marked by a light. The coast for about 2.5 miles NE of Sawazaki Bana is bordered by rocks extending up to 0.4 mile offshore.

Mano Wan is entered between Tagirisu Bana, about 6 miles NE of Sawazaki Bana, and Daiga Hana, about 3.8 miles farther NNW. Depths in the entrance to the bay are 40m, shoaling

towards its head. The bottom is mostly sand. Mano Wan provides good anchorage in NE winds; during SW winds, heavy seas run into the bay.

Daiga Hana (37°58'N., 138°15'E.), the NW entrance point of Mano Wan, is marked by a light. Okinoe Guri, a pinnacle rock, with a depth of 2.5m, lies at the outer end of foul ground extending about 0.5 mile SSW of the point. Futamata Iwa, two rocks, the highest 17.1m high, lies on this foul ground, about 0.3 mile SW of Daiga Hana.

Futami Ko (Hutami Ko), about 0.8 mile NNE of Daiga Hana, is sheltered by a breakwater extending E, and marked by a light.

Sawane Ko, situated in the NW corner of Mano Wan, 1.75 miles N of Futami Ko, is a small harbor protected by a breakwater. A light is shown from the breakwater head.

A light is shown from the head of a breakwater, on the E side of Mano Wan, 4 miles E of Daiga Hana.

Gakeno Hana, a white cliff, 33m high, is conspicuous about 1 mile farther N. A bank, with depths of less than 4.9m, extends up to 0.8 mile W of Gakeno Hana. A detached breakwater, marked by a light at its E end, extends to about 0.7 mile E of Gakeno Hana.

Daijoji Se, with a depth of 2.2m and marked by a beacon, lies on the N part of the above bank, about 0.8 mile NE of Gakeno Hana.

2.21 The village of **Sawane** (38°00'N., 138°17'E.) ([World Port Index No. 61880](#)) lies near the shore farther N.

The village of Kawaharada, about 4 miles NE of Daiga Hana, has a white monument, a large factory, and a white chimney in the area.

A chimney and the red roof of a factory lie in the village of Shimmachi, about 4 miles E of Daiga Hana. Shioyano Se, with a least depth of 1.3m near its outer edge, extends about 0.8 mile W of a point lying close SW of the village.

Anchorage.—Anchorage can be taken in the following places:

1. Off Futami Ko, in 10.1m, sand, E of the breakwater head.
2. Off Sawane, in 9.2m, sand, with the beacon on Daijoji Se bearing 305°, distant about 0.6 mile.
3. Off Kawarada, in 14 to 15m, sand, with the monument at Kawaharada bearing 035°, distant about 0.8 mile.
4. Off Shimmachi and N of Shioyano Se, in 11 to 11.9m, sand, with the chimney at Shimmachi bearing 115°, distant about 0.7 mile.

2.22 Ao Shima, 10.1m high, lies about 0.7 mile WNW of Daiga Hana. Inakuziro Ko lies about 0.5 mile farther NW.

Nagate Misaki, about 1.8 miles NW of Daiga Hana, is marked by a light. The coast between Nagate Misaki and Kasuga Saki, about 2.5 miles N, is bordered by dangers extending up to 0.5 mile offshore. Shiro Shima, 11.9m high, lies about 0.5 mile N of Nagate Misaki.

Aikawa Wan, entered between Kasuga Saki and a point about 1.5 miles NNW, is open W, has bad holding ground, and is suited only for small vessels. Ichiri Shima, a black rock, 2.6m high and marked by a light, lies on the N side of the entrance, about 1 mile N of Kasuga Saki. Gasa Guri, a rock with less than 2m, lies nearly 0.5 mile N of Ichiri Shima.

O Saki, about 4.5 miles NNE of Kasuga Saki, is marked by a light; O Shima, an islet, 11m high, lies about 0.2 mile off the point. Himezu Ko lies about 1 mile SSW of O Saki.

Nyu Saki (38°12'N., 138°20'E.), about 7 miles NNE of O Saki, is marked by a light about 0.3 mile SE of the point. Takati Ko lies about 0.7 mile E of the point. A fish haven is reported to lie about 1 mile N of the point.

Seki Misaki, about 5 miles NE of Nyu Saki, rises to an elevation of 137m; a light is shown on its summit.

Ono-Kame Hana (38°19'N., 138°28'E.), about 5 miles farther NE, rises precipitously to an elevation of 167m; from a distance NE or SW, it appears as a detached rock.

Foul ground extends up to 0.7 mile offshore between Ono-Kame Hana and Haziki Saki, about 2.5 miles ENE. Futat-sugame, an islet 67m high, lies close offshore, midway between the points. Todo Shima, 4.6m high, lies about 0.8 mile NE of the islet.

Niigata Ko to Naoetsu Ko

2.23 The coast between Niigata Ko and **Kakuda Misaki** (37°47'N., 138°49'E.), about 15 miles SW, consists of sandy beach, backed by hills, about 30m high and covered with pine trees. Four Loran towers are conspicuous about 4 miles SW of the entrance to Niigata Ko. A light is shown about 5.5 miles SW of these towers. A submarine cable projecting NNE lies about 1 mile SW of the light.

Kakuda Misaki, marked by a light, is a spur of Kakuda Yama, 482m high and conical, about 1 mile ESE. The coast between Kakuda Misaki and the mouth of Shin-Shinano Gawa, about 8 miles SSW, is backed by mountains. Due to the large quantities of silt which are brought down, the sea is discolored in the vicinity of the mouth of Shin-Shinano Gawa, and depths are liable to change, especially in winter and when the river is in spate. Yahiko Yama, 586m high, lies about 5 miles SSW of Kakuda Yama; it has two conical peaks, which appear as one from the N. Mizo Ko, a fishing harbor, lies about 3 miles SSW of Kakuda Saki.

Teradomari Ko, a small harbor, lies about 1.5 miles S of the mouth of Shin-Shinano Gawa. A channel dredged to 4.9m leads from the harbor entrance to a cargo pier.

The coast from Teradomari Ko to Shiya Hana, about 11.5 miles SW, is mostly sand and shingle beach, and is foul up to nearly 0.5 mile offshore. Izumosaki Ko, a small fishing harbor, lies about 7 miles SW of Teradomari Ko; a light is shown about 0.4 mile NW. A fish haven lies 2 miles NW of Izumosaki Ko.

Shiya Hana (Shiia Hana) (37°29'N., 138°37'E.) is faced with a reddish cliff, and has a wooded summit; a light is shown from the point. A wooded summit, 357m high, is conspicuous about 5 miles E of Shiya Hana, in a range of hills, which lie parallel to the coast. Reefs extend about 0.4 mile off Shiya Hana.

A tower, 87m high, painted in red and white bands and marked by red obstruction lights, lies about 3 miles S of Shiya Hana.

The coast between Shiya Hana and Kashiwazaki Ko, about 8 miles SSE, consists of sand and shingle beach, backed by wooded hills, 120 to 150m high.

2.24 Kashiwazaki Ko (37°22'N., 138°32'E.) is protected by West Breakwater extending NE then NNE, and by a groin extending NNW from the E side of the harbor. Kashiwazaki is a mining and industrial city.

The fairway from the harbor entrance to the N side of Nakahama Wharf has been dredged to 10.1m, although depths in the fairway may be unreliable. Depths of 5.6 to 11.1m lie alongside Nakahama Wharf. East Wharf, West Wharf, and Central Wharf have alongside depths of 6 to 8m, 3 to 5.5m, and 4.3m, respectively.

The coast between Kashiwazaki Ko and Yoneyama Saki, about 5 miles WSW, consists of steep cliffs of red clay; reefs extend up to 0.3 mile offshore.

Yoneyama Saki (37°19'N., 138°26'E.), marked by a light, is conspicuous, with its dark, black, rocky cliff contrasting with the red cliffs NE. It is a spur of Yone Yama, about 3 miles SE, which rises to an elevation of 993m, and is the highest peak in the vicinity. Yoneyama Saki is a good radar target at 20 miles.

The coast from Yoneyama Saki to Naoetsu Ko, about 12 miles SW, consists mainly of sandy beach, backed by sand dunes about 30m high, with pine woods behind them in places. From seaward, this stretch of coast, which is steep to except at either end, appears green in its upper part, and gray in its lower part; the mountains in the background appear light blue.

Naoetsu Ko (37°11'N., 138°15'E.)

World Port Index No. 61865

2.25 Naoetsu Ko (Naoetu Ko) is a specified port situated close E of the mouth of Seki Kawa (Ara Kawa). Naoetu Ko is protected by two breakwaters. West Breakwater extends 0.3 mile NNW from the E side of the mouth of the Seki Kawa, then 1.5 miles NNE. A light is shown from close to its head. A training wall extends a short distance NNW from the W entrance point of the river. Another training wall extends 0.15 mile NNW from a position 91m SW of the W entrance point of the river; a light is shown from its head. West Breakwater has been extended 0.3 mile NNW.

East Breakwater, which is detached, extends 0.4 mile NE from a position 0.6 mile S of the head of West Breakwater; it is marked by a light at each end.

A detached breakwater extends 0.25 mile seaward from near the shore 1 mile ENE of the harbor entrance; a light is shown from its head.

The harbor consists of two outer basins and an inner basin. West Wharf, at the root of West Breakwater, forms the SW side of the W basin. Central Wharf, farther NE, separates the W basin from the E basin. East Wharf lies farther NE.

A light is shown on a short spur at the SW end of Central Wharf.

Tides—Currents

The tidal rise at Naoetu Ko is 0.3m at MHWS and 0.2m at MHWN.



Naoetsu Ko from SE

Depths—Limitations

West Wharf No. 1 and West Wharf No. 2 each have a length of 185m and a depth alongside of 10m.

Center Wharf No. 1 has a length of 130m and a depth alongside of 7.5m. Center Wharf No. 2 is 185m long and has a depth alongside of 10m.

East Wharf No. 1, East Wharf No. 2, and East Wharf No. 3 each have a length of 185m, a depth alongside of 10m, and a 15,000 dwt capacity.

Aspect

Five tanks stand near the root of West Breakwater. Six aluminum silos, close S of West Wharf, at the root of W breakwater, are conspicuous from a distance. An unloader is conspicuous on the wharf.

There are numerous chimneys standing SE of the harbor. The highest chimney, with an elevation of 123m and painted in red and white bands, lies about 1 mile ESE of West Wharf.

A power plant chimney, with an elevation of 35m, lies about 0.8 mile ENE of West Wharf; the power plant burns waste gas and sometimes emits flames.

A radio tower, 71m high and painted red and white, stands on the roof of a building, 2 miles SSW of West Breakwater Light. The tower is marked by a red light.

Beacons, showing blue, white, and yellow lights, about 1.3 miles SW of the mouth of Seki Kawa, mark a submarine cable landing; the lights can be seen from 8 miles offshore.

Pilotage

Pilotage is not compulsory but is available. the pilot boards near the quarantine anchorage and can be contacted on VHF channel 16. A tugboat or work boat is used as a pilot boat. Pilotage is available during daylight hours only.

The harbor office is situated on the S side of the inner harbor.

Anchorage

Large vessels anchor outside of West Breakwater. The quarantine anchorage, with a radius of about 0.4 mile, is centered about 1.3 miles NW of the mouth of Seki Kawa; it has depths of 15.7 to 25m, sand, good holding ground. Small vessels can anchor, in a depth of about 9.2m, on the inner side of East Breakwater. A fish haven lies 1 mile N of West Breakwater Light.

Directions

Naoetsu Ko is entered between West Breakwater and the W end of East Breakwater. The head of West Breakwater should be given a wide berth.

Naoetsu Ko to Yama Wan

2.26 The coast between Naoetsu Ko and the mouth of Hime Kawa, about 22 miles WSW, is low and backed by densely-wooded mountains. Rocks lie up to 0.5 mile offshore along this coast.

Mushiu Hana, about 2.8 miles WSW of Naoetu Ko, is bordered by reefs, the outermost danger being Fufu Iwa, consisting of two rocks, the N rock, 1.9m high, about 0.5 mile.

A radio tower, with an elevation of 300m and silver-colored, lies about 3.5 miles WSW of Naoetsu Ko.

Torigakubi Saki (37°10'N., 138°06'E.), about 7.5 miles W of Naoetu Ko, is marked by a light and rises to a hill, 314m high, about 1 mile SE. Nadachi, a small fishing harbor, lies on the W side of the point. Me Guri, a rock with a depth of 1.5m, lies about 0.2 mile N of Torigakubi Saki.

The mountains backing this coast are densely wooded and of a uniform color. Clouds and fog occasionally cover parts of the mountains in May and June, and white clouds hide the peaks in summer; however, clouds and fog usually dissipate towards sunset. Hiuchi Yama (Hiuti Yama), 2,462m high, lying about 15 miles S of Torigakubi Saki, with Myoko San and Yake Yama, are the highest mountains in the area.

Caution is necessary to avoid fishing nets which are laid up to 2 and 3 miles offshore between Torigakubi Saki and Ikuji Hana, the E entrance point of Toyama Wan.

Tsutsuishi Ko and Nou Ko (No Ko) are small fishing harbors, about 3 and 6 miles SW, respectively, of Torigakubi Saki.

2.27 Himekawa Ko (37°02'N., 137°51'E.), protected by breakwaters, lies about 0.4 mile E of the mouth of Hime Kawa, and is a local port. A shingle bar obstructs the mouth of Hime Kawa and can only be crossed by small vessels in good weather. The depth in the channel is 9m; the draft limitation is 8.2m. Chimneys are conspicuous E and W of the harbor.

Depths—Limitations.—Center Wharf No. 1 through Center Wharf No. 4 each have a length of 130m, a 7.5m depth alongside, and a 5,000 dwt capacity. Center Wharf No. 5 is 165m long, with a depth of 9m, and a 10,000 dwt capacity.

West Wharf No. 1 is 90m long, with a depth alongside of 5.5m. West Wharf No. 2 is 130m long and has a 7.5m depth alongside.

Pilotage.—Pilots are available from Naoetsu and Niigata upon request. The pilot will board at the harbor entrance. Vessels may berth during daylight hours only. No tugs are stationed at the port.

Anchorage.—Anchorage may be taken about 0.5 mile NNE of the E breakwater lighthouse, in depths of 22 to 23.8m.

The coast between the mouth of Hime Kawa and Miyazaki, about 12 miles WSW, is low, steep-to, and backed by mountains. Kurohime Yama, conical and rising to an elevation of 1,222m, is somewhat conspicuous about 4.5 miles SW of the mouth of Hime Kawa.

Miyazaki Hana (36°58'N., 137°35'E.) is easily recognized, as the land rises gradually from it to the mountains inland, and it lies at the E end of the delta of Kurobe Kawa. A light is shown from the point and from the head of a breakwater close NW. An illuminated radio tower, with an elevation of 310m, stands about 0.8 mile SSW of the point.

Okino Shima, 0.8m high, is the outermost of three rocks extending nearly 0.5 mile N of Miyazaki Hana; a rock, drying 0.3m, lies about 0.1 mile NNE of Okino Shima, and a depth of 5.5m lies about 137m farther NNE.

The coast between Miyazaki Hana and Ikuji Hana, about 10 miles WSW, is the delta of Kurobe Kawa. It is fringed with

beaches of shingle and scattered boulders, backed by villages and pine woods, with cultivated land behind. Kurobe Kawa has a shifting bar, on which the sea breaks with onshore winds; it is accessible to boats only in good weather.

Toyama Wan

2.28 Toyama Wan is entered between **Ikuji Hana** (Ikuzi Hana) (36°54'N., 137°25'E.) and Otomari Hana, about 17.5 miles WNW. The bay lies SE of Noto Hanto, a large peninsula. Fushiki-Toyama Ku occupies most of the S shore of the bay.

The coast of the bay east of **Fushiki** (Husiki) (36°47'N., 137°04'E.) consists of sand and pebble beach, deepening rapidly to depths of 100 to 200m, about 1 mile to 2 miles offshore. Several rapid rivers flow into the bay along this coast. There are sand bars at the mouths of these rivers, but in their approaches there are deep submarine gullies. The positions of these gullies can be identified by the deep blue color of the sea, except when the rivers are in flood, when the sea becomes muddy; the muddy water extends up to 8 miles offshore when the rivers are in flood and the deeps may not be easily detected. There are suitable depths for anchoring on both sides of the deep gullies.

Many fixed fishing nets lie within depths of 200m in the bay. Vessels planning to stop at various ports in the bay should first proceed out beyond the area of fishing nets and turn toward shore only after arriving directly off the next port. The water may turn yellow in spring during the thaw and make it difficult to see the fishing net buoys.

East of Fushiki there are numerous towns and villages separated by stretches of pine forests; there are also many small fishing ports. The coast is backed by fertile land extending some distance inland. From the middle of the bay entrance, undulating mountain ranges appear to border the bay entrance.

A light is shown on Ikuji Hana.

Four chimneys of a power plant are conspicuous nearly 0.5 mile WSW of the mouth of **Jinzu Gawa** (36°45'N., 137°13'E.); the chimneys are 162m high, painted in red and white horizontal bands, and marked by red lights. A chimney, 102m high, also painted in red and white horizontal bands and marked by red lights, is conspicuous about 0.2 mile farther WSW. A chimney, 75m high, painted in red and white bands and marked by red lights, is conspicuous about 1 mile ESE of the entrance to Toyama Ku.

Shiro Yama (Siro Yama), a hill, 145m high, is conspicuous nearly 5 miles SW of the mouth of Jinzu Gawa.

Numerous chimneys surround Shimminato Ku, some exhibiting red obstruction lights. The highest are two chimneys of a power plant, about 1.3 miles SSE of the head of E breakwater; the chimneys have elevations of 223 and 163m.

The chimney of a steel plant is conspicuous about 0.5 mile SSW of the entrance to Fushiki Ku; the chimney is 25m high, and belches white and black smoke.

Numerous oil tanks stand on the reclaimed land between the mouth of Oyabe Gawa and the root of the E breakwater at Kokubu Ko, about 0.5 mile NW.

Hachibuse Yama, 211m high and surmounted by a Buddhist shrine, lies about 1.5 miles W of Fushiki. Futagami Yama (Hutagami Yama), 273m high, lies about 0.5 mile farther SW.

Iwasakino Hana, a conspicuous headland, is located on the coast NE of Hachibuse Yama; a light is shown nearly 0.5 mile SE of the headland.

Sekido San, 565m high and cone-shaped, is very conspicuous about 4 miles W of Otomari Hanto, and is the highest mountain on the W side of Toyama Wan.

Lighted buoys mark Kokubo Passage, Fushiki Passage, Shimminato Passage, and the W side of Toyama Passage.

Kurobe Ko, a small fishing harbor, lies about 0.5 mile SE of Ikuji Hana. Kyoden Ko, another small fishing harbor, lies about 2.5 miles farther S.

Uozo Ko, a small local port, lies about 2 miles SSW of Koyden Ko; its auxiliary port lies about 0.5 mile farther S.

Namerikawa Ko and Mizuhashi Ko, small fishing harbors, lie about 3.5 and 6 miles SW, respectively, of Uozo Ko.

Fushiki-Toyama Ku (36°46'N., 137°08'E.)

World Port Index No. 61850

2.29 Fushiki-Toyama Ku, one of the most important trading and industrial ports on the NW side of Honshu, consists of an outer harbor and an inner harbor. Four passages (Toyama, Shimminato, Fushiki, and Kokubo) lead through the outer harbor. The inner harbor consists of Toyama Ku, close E of the mouth of Jinzu Gawa (Zinzu Kawa); Shimminato Ku, about 5 miles W; Fushiku Ku, about 2.5 miles farther WNW, in the mouth of Oyabe Kawa; and the fishing harbors of Shimminato, and Kokubu Ku, lying E and W, respectively, of Fushiki Ku. The harbor fronts the cities of Toyama, Shimminato (Sinminato), and Takaoka. The town of Higashi-Iwase lies on the E side of Toyama Ku, and is connected by a barge canal to the city of Toyama.

Winds—Weather

The weather is typical of the NW side of Honshu, with 25 rainy days per month from December through February. The winter monsoons are somewhat weakened by the protection of Noto Hanto.

At Fushiki, the prevailing winds are SW from October to March; they diminish somewhat in April and May. In June, winds between the N and NE prevail. From July to September, SW winds are dominant, with a lesser number from the NE. The average wind speed is about 5.3 knots. Land and sea breezes are prominent, especially in the summer.

Tides—Currents

The tidal rise at Fushiki is 0.3m at MHWS, and 0.2m at MHWN.

Heavy swells penetrate Fushiki-Toyama with strong N and NE winds; it is very calm with winds from other directions.

In winter on a fairly calm day, a sudden onset of high waves, with heights of 3.1 to 4.9m and intervals of 10 to 12 seconds, has occurred, and continuing for over a half day, caused damage along the coast at the head of Toyama Wan. These waves often appear after a low pressure system passes from W to E in the N part of the Sea of Japan (or S of Sakhalin), or moves N along the S coast of the Japanese islands. The

phenomenon takes place because even after a low pressure system passes through and Toyama Wan is no longer in the area of strong winds, it is affected by the aftermath in the form of storm swells, which are amplified as they near the head of the bay, due to the topography of the bay bottom and by the currents in the area.

Depths—Limitations

Banks, with depths of less than 10.1m, separated by a deep submarine gully, lie on each side of the harbor entrance

Berths 1 through 5, on the E side of the harbor, have berthing lengths of 130 to 220m, with depths of 6.5 to 10.1m alongside, and a capacity of 20,000 grt.

Berths 1 through 5 on the W side of the harbor, used for handling lumber and petroleum products, have berthing lengths of 90 to 185m, with depths ranging from 5.2 to 10.1m alongside.

An offshore pipeline berth, consisting of a large lighted mooring buoy, painted in red and white stripes, is moored about 1.5 miles NW of the entrance to Toyama Ku; it can accommodate tankers up to 200,000 dwt in a depth of 27.1m.

Toyama Ku has ten wharfs, numbered 1 through 5 and 10 along the E bank; and 6 through 9 along the W bank. Wharf No. 1 through Wharf No. 3 each have a berthing length of 185m, with depths of 9.2 to 10.2m alongside. Wharf No. 4 through Wharf No. 10 range in length from 50 to 185m, with depths ranging from 5 to 10.2m alongside.

Shimminato Ku (Sinminato Ku), the entrance channel, sheltered by breakwaters, has dredged depths of 11.9 to 12.8m. The port is used principally by large timber ships.

Sin Shima Cargo Wharf has a length of 200m and alongside depths of 4 to 4.9m. On the left bank, Quay No. 1 and Quay No. 4 accommodate vessels of 10,000 to 15,000 dwt, in depths of 6 to 9m. On the right bank, Quay No. 2 and Quay No. 3 have depths of 8.4 to 9.5m alongside and accommodate vessels of up to 18,750 dwt.

Kokubo Ko has depths of 2.7 to 5.5m alongside the berths. Depths at the harbor entrance are subject to silting.

The largest drydock at Toyama Ku has a length of 192m, a width of 34.1m, and a depth of 7.9m; it can accommodate vessels up to 48,000 dwt.

Continuous dredging is necessary to maintain depths in the harbor due to silting and the sediment discharged by the pulp mill. Depths should be obtained from the port authorities prior to arrival.

Aspect

The harbor consists of four interconnecting basins. Lights are shown from octagonal towers, 10m high, at the head of West Breakwater, and at each end of East Breakwater. A light, 0.35 mile E of East Breakwater, marks the W end of a breakwater and complex of jetties and quays extending from Shimanto Ku.

A light is shown from the end of a spur which extends 91m W from the root of East Breakwater.

Numerous chimneys, some marked by obstruction lights, stand in the vicinity of the harbor.



Shimminato Ku from WNW

Pilotage

Pilotage is not compulsory. Pilots are available and should be used by vessels without local knowledge.

Pilots for Toyama Ku are available at the anchorage from 0700 to 1800 during February through November and from 0700 to 1700 during December and January. Pilots for Shimminato Ku and Fushiki Ku board about 2 miles NNE of the front range light at Fushiki Ku.

Anchorage

Anchorage can be taken in suitable depths, mud bottom, off Toyama Ku, with offshore winds; however, caution is required when anchoring to avoid the fishing nets and the submarine gullies. The quarantine anchorage lies about 0.5 mile NE of the harbor entrance.

North winds raise a heavy swell in the outer harbor.

Good anchorage can be taken N of the front range light at Fushiki Ku, and W of Fushiki Passage, in 7.9 to 11.9m, fine sand, from 0.5 to 1 mile off the coast, near the quarantine anchorage. The area E of Fushiki Passage does not afford anchorage due to fishing nets and the deep submarine gully.

Directions

In the approach to Fushiku Ku, Hachibuse Yama and Futagama Yama are good marks until the range lights can be made out, when they should be kept in line bearing 201° through Fushiki Passage, to clear the fishing nets. When about 0.5 mile from the front range light, course should be altered as appropriate to enter the harbor. Currents in the inner harbor may attain velocities of 3 to 4 knots when the river is flooded or during the spring thaw.

Fixed fishing nets lie on both sides of all passages.

Toyama Ku is entered on a heading of 180°, steering for the center of E and W breakwaters, care being taken to avoid being set by the river current.

2.30 Fushiku Ku is situated in the mouth of Oyabe Kawa. Short breakwaters extend from each side of the entrance; lights are shown from the head of the W breakwater and from the E head of the E breakwater, which is T-shaped.

A detached breakwater, 0.15 mile long, lies on a NW-SE axis, 0.6 mile NNE of the W breakwater; a light is shown from each end.

Himi Ko (36°52'N., 137°00'E.), a small fishing harbor, lies about 5.5 miles NW of Fushiki Ku. Kara Shima, an islet, 11.9m high and marked by a light, lies about 0.2 mile E of the head of the N breakwater at Himi Ko; rocks, awash and sunken, extend about 0.2 mile NE and SE of the islet.

Fixed fishing nets are in the vicinity of Kara Shima, and extend up to 2.8 miles E of the islet.

Yabuto Ko, Ettyu Tomari Ko, and Unami Ko, small fishing harbors, lie about 1.5, 2, and 3 miles NNE, respectively, of Kara Shima.

Mera Ko, a small fishing harbor marked by a light, lies about 1 mile SW of Otomari Hana. About 2 miles SSW, another light is shown at the point. Abu Shima, an islet, 12.8m high, lies about 0.5 mile offshore, about 1 mile S of Mera Ko.

Toyama Wan to Nanao Wan

2.31 Sasanami Saki (36°59'N., 137°03'E.), on which stands the village of Kurosaki, lies about 1.5 miles N of Otomari Hana. A spit, with depths of 4.8m, extends from the coastal bank, about 1.3 miles N of Sasanami Hana.

The small harbors of Iori Ko and Enotomari Ko lie about 2.5 and 4.5 miles N, respectively, of Sasanami Hana.

The dangers E and SE of **Kannon Zaki** (37°06'N., 137°04'E.) will be described with Nanao Wan beginning in [paragraph 2.34](#).

Nanao Wan

2.32 Nanao Wan, on the E side of Noto Hanto, is entered between Kannon Zaki and **Ebisu Zaki** (Okinami Hana) (37°11'N., 137°01'E.), about 6 miles N. Noto-jima, occupying the center of the large bay, divides it into three parts, Nana-

ohoku Wan (Kita Wan), Nanao-nan Wan (Minami Wan), and Nanao-sei Wan (Nishi Wan), on the N, S, and SW sides, respectively, of the island. Nanao-hoku Wan provides good anchorage for large vessels. Nanao Ko lies in the S part of Nanao-nan Wan; its harbor occupies the major part of it. Nanao-sei Wan provides safe anchorage for small vessels; however, there are fish havens in the bay, and Nisi Guri, a reef with a depth of 2.6m, lies in the SE part of Nanao-sei Wan.

Aspect.—Kannon Zaki, the S entrance point, is wooded, rises to an elevation of 28m, and is marked by a light.

Futago Yama, 182m high, is very conspicuous about 3 miles NW of Ebisu Zaki; from the E, one summit is visible, but from the S, two summits are visible.

Maru Yama, a rounded hill, 67m high, surmounts a peninsula, nearly 1.5 miles SW of Ebisu Zaki.

Besshoga Take (Beesho Take) (37°11'N., 136°51'E.), 358m high, is conspicuous about 2 miles W of the head of Nanao-hoku Wan. Mushaga Mine, 304m high, is conspicuous about 4 miles farther SW.

Nanao-Nan Wan

2.33 Ko-Guchi Seto (Koguchi Seto), the entrance to Nanao-nan Wan, is entered between Kannon Zaki and Matsu Hana, about 1 mile NNW. A directional light showing a white sector stands 1.5 miles WSW of Matsu Hana. Lighted buoys mark the entrance channel. Three TV towers are conspicuous near the summit of Yomurazuka Yama, about 1.3 miles N of Miya Saki.

Kannon Zaki is bordered by foul ground. Me Guri, lying in a N-S direction, has a least depth of 1.3m at its N end, about 0.8 mile E of the point. A detached 4.3m patch lies about 1.3 miles SE of the point. Depths of 8.7m lie about 1 mile ESE of Kannon Zaki.

Sohama Dashi, with a least depth of 3.8m, extends to about 0.5 mile NNW of Kannon Zaki. Morita Guri, with a least depth of 1.1m, lies on the S side of the fairway, about 0.8 mile farther W, and about 0.4 mile offshore.

O Guri, with a least depth of 3.7m, lies about 0.7 mile ENE of Matsu Hana, and is the outermost danger on the N side of the entrance. Naga Guri, with a least depth of 4.2m, lies about 0.3 mile E of Matsu Hana. Shichiko Sho fringes the N shore of Ko-Guchi Seto, and extends up to 0.1 mile offshore, with a depth of 3.6m at the shallowest outer end.

Suzuki Sho (Suzuki Guri), with depths of less than 4.9m, extends about 0.4 mile SW of Koizumi Saki; a lighted buoy marks its SW side. Depths of less than 10.1m extend nearly 0.5 mile SW of Koizumi Saki.

Shin Saki lies about 0.5 mile SE of Koizumi Saki, and has depths of less than 5.5m extending about 0.2 mile N and W of the point.

Tera-jima, an islet 29m high, lies about 1.5 miles WSW of Koizumi Saki. Kamiya Dashi, with a depth of 5.2m, lies about 0.5 mile S of Tera Shima.

Asa Guri, with a least depth of 3.7m and marked N by a lighted buoy, lies on the S side of the fairway, about 1 mile SE of Miya Saki.

O Se, with a least depth of 3.7m, lies about 0.7 mile S of Miya Saki; a lighted buoy is moored about 0.3 mile W of the shoal.

Waka Dashi, with a least depth of 4.9m, lies about 1 mile S of Miya Saki, and is marked W by a lighted buoy.

Is Saki, the S entrance point of Nanao-se Wan, lies about 1.8 miles WSW of Miya Saki.

Me Shima, an islet 3.4m high, lies in the SE part of Nanao-nan Wan, about 2 miles S of Tera Shima; it lies near the W end of a bank with depths of less than 4.9m.

Nanao Ko (37°03'N., 136°59'E.)

World Port Index No. 61840

2.34 Nanao Ko occupies the major part of Nanaonan Wan; although there are a number of reefs, it provides good anchorage for large vessels. Extensive reclamation have been undertaken about 0.7 mile NE of Oda Wharf.

Winds—Weather.—There are few clear days throughout the year, and in January and February it rains or snows almost every day. The air temperature seldom drops below -5°C, even during the winter. The winter monsoons have little effect on the port, which is sheltered by Noto Hanto and Noto-jima. Fog tends to form in spring and fall when there is no wind, but it dissipates quickly.

Tides—Currents.—The tidal rise at Nanao is 0.3m at MHWS, and 0.2m at MHWN.

The flood tidal current sets W and the ebb tidal current sets E in Ko-Guchi Seto, with maximum velocities of 0.3 knot about 3 hours after lower HW.

Depths—Limitations.—The draft limitation in the channel is 9.8m.

Bridgestone Company Liquefied Gas Pier, a T-head pier with dolphins, lies about 0.4 mile SW of Shin Saki and can accommodate 60,000 grt vessels in a depth of 14m. Small tankers can be accommodated at Kyoritsy Jetty, with a depth alongside of 6.2m.

Bussein Wharf, nearly 1 mile S of Me Shima, has a berthing length of 200m, with depths of 10.1m alongside. Two lighted mooring buoys, N of the wharf, can accommodate 15,000 grt vessels in a depth of about 10.1m.

Wharf No. 2, about 0.8 mile SW of Bussein Wharf, has a depth of 8.5m alongside its E side. Wharf No. 1, close W, has depths of 6.3 to 7m on its W side and 5.5m on the E side.

Pilotage.—Pilotage is compulsory for vessels over 10,000 grt; send a request for pilots via agent. Vessels can contact the pilot 1 hour before berthing on VHF channel 16. Pilots board 2 miles from Harbor Entrance Lighted Buoy No. 1 on a line bearing about 259 from Kojin Hang Directional Light. The Combined Port Affairs Building is situated near the root of Wharf No. 1.

Anchorage.—The quarantine anchorage, centered about 0.5 mile E of Miya Saki, has a depth of about 17.1m, sand, and is sheltered from NW winds.

Good anchorage can be taken, in a depth of about 7.9m, sand, good holding ground, between Waka Dashi and Wharf No. 1.

Directions.—Vessels should approach Ko Guchi Seto, remaining at least 3 miles off the E coast of Noto Hanto to avoid fixed fishing nets.

Vessels bound W of Wharf No. 1 enter Ko-Guchi Seto on the entrance range. When the W extremity of Shin Saki bears 200°, alter course to 233°, passing SE of Suzuki Sho. When the summit of Tera Shima bears 336°, the N extremity of Is Saki should be steered for, bearing 259°, passing between Kamiya Dashi and Asa Guri. After rounding the lighted buoy moored W of O Se, alter course S, passing W of the lighted buoy marking Waka Dashi, then proceed to the anchorage.

Vessels bound for Bussein Wharf proceed as directed above, and after passing between Kamiya Dashi and Asa Guri, alter course SSE, passing well W of Asa Guri and E of Me Shima, then proceed to Bussein Wharf.

Nanao-Hoku Wan

2.35 O-Guchi Seto (Okuchi Seto), the entrance to Nanao-hoku Wan, has its least width between **Bagaura Saki** (37°10'N., 137°02'E.) and Hiuchi Saki (Hechiwa Saki), about 1.3 miles NNW. Maru Yama lies about 0.5 mile NE off Hiuchi Saki. Ebisu Zaki lies about 1.5 miles farther NE. The fishing harbors of Enome Ko and Bagaura Ko lie about 1 mile SE and close W, respectively, of Bagaura Saki.

Anchorage.—Nanao-hoku Wan affords anchorage to large vessels, in 20 to 40m, as convenient. Small vessels, with local knowledge, can obtain sheltered anchorage in the coves and inlets of the bay according to the direction of the wind.

Anamizu Iri affords anchorage to small vessels in depths of 11 or 12.8m, mud. Nakai Iri also affords anchorage, but difficulty may be experienced in its entrance.

Fixed fishing nets are set in the entrance to Nanao-hoku Wan, and within the entrance off the N shore, from October to July.

Directions.—From well outside the dangers at the E end of O-Guchi Seto, steer for Sode Saki on a bearing of 272°. When Enomo Ko Breakwater Light is abeam, bearing 182°, alter course to 253°, steering for the N extremity of O Shima. When Bagaura Ko E Breakwater Light is abeam, bearing 163°, alter course to 270°. After passing Futo Se and Bando Se, course may be altered as requisite to an anchorage in the bay.

Vessels bound for Animizu Ko continue steering course 270° until O Shima is abeam, bearing 180°, when course is altered to 309°, steering for the harbor entrance, with Animizu Light on the starboard bow. Steer a mid-channel course NE of Okinu Guri.

There are two navigable channels into Nanao-hoku Wan, each about 0.4 mile wide, with depths of over 10.1m. The N channel lies between Maeno Se and the N shore. The S channel, the recommended passage, passes S of Okino Se.

Caution.—A bank, with depths of less than 10.1m, extends up to about 1 mile NE of Bagaura Saki. Toda Guri, with a depth of less than 1.8m, and Kasagi Guri, with a least depth of 4m, lie near the NE ends of the bank.

Maeno Se, with a depth of 4.9m, lies nearly 1 mile S of Ebisu Zaki. Nakano Se, with a depth of 6.4m, lies about 0.4 mile farther SE. Okino Se, with a depth of 10.5m, lies about 0.3 mile ESE of Nakano Se.

Sode Zaki and Kagata Hana lie about 0.8 and 1 mile WSW, respectively, of Hiuchi Saki. Futo Se, with a depth of 3.1m, lies about 0.2 mile S of Kagata Hana, at the outer end of foul ground extending off the points.

Man Zaki lies about 2.3 miles SSW of Kagata Hana. Bando Se, with a least depth of 5.8m, is the outermost of the reefs extending about 1.8 miles NE of Man Zaki. O Shima, 6.4m high, about 0.8 mile N of Man Zaki, is the northernmost of a group of islets lying off the point. A light is shown on the point, about 3.3 miles SW of O Shima.

Okino Guri, with a least depth of 8.2m, lies about 1 mile ESE of **Kaimochi Hana** (37°12'N., 136°55'E.), the W entrance point of the common approach to Anamizu Iri and Nakai Iri, two coves at the N end of Nanao-hoku Wan.

Fishing nets are set in the area extending 0.5 mile S of Ebisu Zaki. Additional fishing nets are set along the N shore of the bay and near the bay entrance from October to July.

Nanao Wan to Rokugo Saki

2.36 Ukawa Ko (37°15'N., 137°05'E.), a small fishing harbor, lies about 3 miles NNE of Ebisu Zaki.

During certain seasons, fishing nets are laid along the E coast of Noto Hanto and along the shores of Toyama Wan; since some extend 2 to 3 miles from shore, they are considered obstructions to navigation. The fish trap is situated farthest offshore, and its net is set at right angles to the coast. During the day, location of the nets are easily identified due to the wooden and other floats used; however, at night, special caution is necessary as there are nets not equipped with lights. At night, the coast should be given a berth of at least 4 miles.

Caution.—Fishing traps are set near the entrances to harbors; these make navigation difficult. From the beginning of August through the middle of October, there are fewer nets; however, since this is the season for dolphin, dolphin traps can be seen in the entrances to the harbors and in the offing.

2.37 Usetsu Ko (37°18'N., 137°09'E.) lies about 4.3 miles NE of Ukawa Ko; a light is shown from the W entrance point of the harbor. The port is protected by breakwaters, and sheltered from all but S winds. It is most frequented by fishing vessels.

Ikari Shima (Benten-jima), about 2.8 miles E of Usetso Ko, is marked by a light.

Ogi Ko, about 1 mile farther E, is entered N of Inuyama, which is marked by a light. A breakwater extends E of Inuyama; a fisheries dock, with depths of 3.5m alongside, lies on the NW side of the breakwater. Myogi Guri, marked by a light, lies in the middle of the entrance to the harbor. Two TV towers, marked by red and white lights, lie nearly 1.5 miles NNW of Inuyama. A small boat harbor lies close SW of Inuyama.

Tsukumo Wan is entered close NE of Ogi Ko, between Hiyoriyama Hana and Joga Hana, about 0.2 mile NE. Reefs extend from both entrance points, on which breakwaters have been built. Joga Hana Light stands on rocks close to the breakwaters. Another light marks the breakwater on the W side of the entrance. Anchorage can be taken by vessels of less than 1,000 dwt, in 23m, about 0.2 mile NNE of Hiyoriyama Hana. Small craft can anchor, in depths of 11 to 15.8m, in the W arm of Tsukumo Wan.

During bad weather, Tsukumo Wan is liable to be crowded with local fishing craft, and better anchorage can be obtained in either Tsuruga Wan, 110 miles SSW, or Nanao Wan, 15 miles SW.

Aka Saki (37°21'N., 137°16'E.), marked by a light, lies about 3.5 miles NNE of Joga Hana. Kawajiri Wan, about 1 mile S of the point, provides shelter for small craft with local knowledge from W winds.

Iidai Wan

2.38 Iidai Wan, an open bay, is entered between Aka Saki and **Nagate Saki** (37°27'N., 137°22'E.), about 7 miles NE. The fishing harbors of Matsunami Ko, Ukai Ko, Iida Ko, and Takojima Ko, each sheltered by breakwaters, border the shores of the bay. The bay is bordered by sandy beaches, with many shoal areas of less than 4.9m extending up to 0.5 mile offshore.

The bay provides good protection from W to N winds. However, in winter there are times when low pressure frontal systems pass E over the Sea of Japan producing NW winds N of Noto Hanto, while at the same time generating S and SW winds in the bay; these winds are strong and may blow continuously for half a day according to local reports.

Nagate Saki is a low headland marked by a light; a pine-covered hill, 63m high, lies about 0.8 mile W of the point.

In addition to the lights of the fishing ports, the Buddhist temple, with an elevation of 42m, W of Matsunami Ko; Mitsuko Shima, an islet, 28m high, about 0.5 mile S of Ukai Ko; and a white cliff, 252m high, about 2.3 miles W of Iida Ko, are conspicuous.

Caution.—Tempo Guri, a reef with depths of 11.5 to 14.9m, lies about 1 mile E of Mitsuko Shima. Foul ground extends about 0.4 mile E of the islet.

A reef, with depths of 3.3 and 4.2m, lies about 0.6 mile offshore, about 1.4 miles NNE of Mitsuko Shima. Other shoal reefs lie close SW.

Iida Ko (37°26'N., 137°16'E.) ([World Port Index No. 61830](#)) has a berth with a length of 149m and an alongside depth of 4.6m.

Anchorage.—With offshore winds, good anchorage can be taken in suitable depths, mud, E of Ukai Ko, and E of Sogen, farther S.

Caution.—There are a large number of fishing nets in the bay, particularly in the period from autumn to spring. Some nets extend 3 miles from shore.

2.39 **Ai Saki** (37°30'N., 137°21'E.), about 3 miles N of Nagate Saki, has a conspicuous reddish cliff S of it, near Jike; a light on Ai Saki illuminates Gyozya Guri, a rock, about 0.3 mile E. Himeshima Guri, parts of which are above water, extends about 0.8 mile NE of Ai Saki, to which it is almost connected by rocky ridges; a light is shown on the reef.

Kurisaba Guri, a rocky bank, with a least depth of 14.9m, lies about 1.8 miles SE of Himeshima Guri.

Kongo Saki, about 0.8 mile NNW of Ai Saki, rises to Yamabushi Yama, a well-defined conical hill, 201m high, about 0.8 mile W.

Rokugo Saki, about 1.3 miles farther NW, and its off-lying dangers will be described in [paragraph 3.2](#). Norosi Ko (Norochi Ko), a small fishing harbor, lies close S of Rokugo Saki. The NE end of Noto Hanto, between Rokugo Saki and Ai Saki, is generally called Suzo Misaki.